AMENDMENTS TO THE SPECIFICATION

Please replace paragraph [0040] with the following new paragraph:

Preferably, GPRS power control should err on the conservative side, when appropriate. When the calculated power ~~reduction~~ step results in an increase in mobile transmit power, the mobile is commanded to increase its transmit power by the total step. When the power ~~reduction~~ step results in a decrease in mobile transmit power, the algorithm commands the mobile to reduce its power by a fraction of the estimate. This fraction is a tunable parameter. This way, power may be conservatively reduced when quality is good, and quickly increased when quality is bad. Reducing the transmit power by only a fraction of the estimated step provides an algorithm that is more robust to estimation errors and to short term fluctuations in channel quality.

Please replace paragraph [0043] with the following new paragraph:

CPU 111 runs a power control application 112 in accordance with the present invention, which determines the transmit power to be used before ~~transmitting~~ each uplink block is transmitted from the mobile stations 120 to the BTS 110. CPU 111 and its power control application 112, which run the uplink power control algorithm of the present invention, are also frequently and collectively referred to hereinafter as a remote packet control unit (rPCU). CPU 111 also runs a suitable RLC/MAC application (not shown) which segments packets received from an external network into downlink blocks, and also reassembles packets from uplink blocks received from mobile stations.

Please replace paragraph [0046] with the following new paragraph:

If power level has been determined, application 112 updates power control parameters and sends ~~and~~ an updated power level command to the mobile station, and a new measurement interval begins. If the interval lasts too long and application 112 determines that measurements taken over the measurement interval may no longer reflect the current quality of the channel, application 112 increases the mobile station m's transmit power to a predetermined maximum power level, so that a new measurement interval begins.

Please replace paragraph [0059] with the following new paragraph:

Fig. 4 suggests that an uplink power control algorithm should adjust mobile transmit powers to hit a desired range of C/I ratios at the base transceiver station. The appropriate range is a function of the coding scheme in use as well as the propagation environment. But~~,~~ fast~~,~~ accurate estimates of C/I levels are difficult to obtain in general. However, the relationship between BER and C/I, provides another option.

Please replace paragraph [0067] with the following new paragraph:

As illustrated in Fig. 7, the power adjustments made at the end of each measurement interval can result in substantial reductions in transmit power levels for long-lived TBFs. For TBFs consisting of only a few uplink blocks, however, this mechanism alone will not result in any reduction in uplink transmit power. This is because by the time enough blocks are received to estimate the power step, there may be no more uplink blocks to send to the BTS. Such "short-lived" TBFs will likely be common in GPRS networks. ~~(~~This ~~is~~may be especially true of mobiles receiving large volumes of downlink data over TCP, when frequent uplink TCP acknowledgments may generate frequent, short, uplink TBFs.~~)~~ Hence, additional mechanisms may be necessary to control uplink transmit power to reduce uplink power.

Please replace paragraph [0084] with the following new paragraph:

The Quick Ack feature, as more fully described below, is implemented in an effort to improve the transient performance of the power control algorithm. For example, in situation where initial transmit power P_o is much less than target mobile transmit power P_T, then block errors are very likely. Accordingly, the received quality of individual RLC blocks is assessed by the rPCU in the BTS, and if the quality is very poor within a first polling interval, the BTS sends a Quick ACK UL ACK/NACK message ~~message~~ with a new value of Γ_{CH}, a message commanding a higher target mobile transmit power P_T from the mobile station.

Please replace paragraph [0105] with the following new paragraph:

If the current TBF is not frequency hopping, the algorithm at step 1104 determines the smallest value of ~~FCH~~$\underline{\Gamma_{CH}}$ (equivalently, the highest uplink transmit power used) over all uplink timeslots s assigned to the mobile. As the TBF ended normally, this transmit power level gives an excellent indication of the power level a mobile should use if another uplink TBF for this mobile begins in the near future. Since the current TBF is not frequency hopping, set $FH\_TRX^{*} = 0$, and cache the TRX on which the TBF exists. The FHS id is non-existent; thus FHS_id^{*} is set to –1 to indicate this condition.

Please replace paragraph [0106] with the following new paragraph:

If the TBF did not end normally, the procedure moves to step 1105. Since the TBF ended abnormally, it is very likely that the uplink transmit power used by the mobile was too low. The algorithm disregards the current values of ~~FCH~~ $\underline{\Gamma_{CH}}$ assigned to the mobile. Should another uplink TBF for mobile m begin in the near future, the mobile should use the default maximum transmit power (the transmit power corresponding to Γ_{CH}^{min}). Finally, outputs from either of steps 1103 or 1105, the mobile's state vector, is cached at a step 1106.

Please replace paragraph [0112] with the following new paragraph:

Since the mobile shares the time slot with various other uplink TBFs, the time taken before ~~Nmin~~ $\underline{N_{min}}$ uplink blocks are received on a time slot can still be very long. This causes the uplink power control algorithm to react very slowly to rapidly changing interference or shadow fade. This is undesirable especially in cases where the C/I drops to unacceptably low levels over the duration of a measurement interval. This occurs, for example, when the mobile is entering a deep fade or when the interference level increases dramatically over the duration of the measurement interval. Such cases can be handled by periodically increasing the mobile transmit power.

Please replace paragraph [0133] with the following new paragraph:

The procedure used to determine new values of Γ_{CH} must account for downlink reception delays as well as power ramping. To cope with these effects, ~~FNnew(s)~~ $\underline{FN_{new}(s)}$which denotes the start of the measurement interval for mobile m on time slot s, is set as follows:

(a) If |Γold$\underline{\Gamma_{old}}$ - Γnew$\underline{\Gamma_{new}}$ |≤2, then $|P_{new} - P_{old}| \leq 2$. In this case, the uplink power control algorithm can ignore the effect of downlink reception delay because the difference in the transmit powers is small (2dB or less). Thus, set $FN_{new}(s) = FN_c$.

(b) If $|\Gamma_{new} - \Gamma_{old}| \geq 4$, then P_{old}, and consequently C/I, must have been very low or very high. Therefore, the UL RLC blocks received in the interval (T_0, T_2) (see fig. 12, for example) are very likely to experience high BLERs or low BERs, respectively. The uplink power control algorithm can account for this by calculating the next update of $\Gamma_{CH}(s)$ using expressions (8) and (11), or by selecting $\Delta_i(s)$ appropriately.

Please replace paragraph [0143] with the following new paragraph:

At the end of a measurement interval, the uplink power control algorithm uses both BER-based and block error rate (BLER)-based power step estimation techniques to determine how much to adjust the mobile station's transmit power. When the calculated power ~~reduction~~ step results in an increase in mobile transmit power, the mobile is commanded to increase its transmit power by the total step. When the power ~~reduction~~ step results in a decrease in mobile transmit power, the algorithm commands the mobile to reduce its power by a fraction of the estimate. Reducing the transmit power by only a fraction of the estimated step provides an algorithm that is more robust to estimation errors and to short term fluctuations in channel quality.